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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/444,166	11/22/1999	YOSHIMASA HOSONUMA	13167	8299

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GARDEN CITY, NY 11530

EXAMINER

CONTEE, JOY KIMBERLY

ART UNIT	PAPER NUMBER
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2686

DATE MAILED: 12/05/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.
09/444,166

Applicant(s)
Hosonuma

Examiner
Joy Contee

Art Unit
2686



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Aug 11, 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6, 8-12, and 14-18 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6, 8-12, and 14-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other: _____

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DETAILED ACTION

Response to Amendment

1. The indicated allowable subject matter of dependent claims of claims 4,6,10,12,16 and 18 is withdrawn in view of the newly discovered reference to Suzuki et al. ("Suzuki"), U.S. Patent No. 4,707,671. Rejections based on the newly cited reference follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2-6,8-12 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eda et al. ("Eda"), U.S. Patent No. 5,387,888, in view of Suzuki, U.S. Patent No. 4,707,671.

Regarding claims 4,10 and 16, Eda discloses a flexible board (and method of fabricating and a cellular phone including comprising:

(a) an internal layer (2,2' in Fig. 1) (col. 3, lines 26-40);

(b) a line (1 in Fig. 1) formed in a first area of said internal layer, said line radiating unnecessary radiation (col. 3, lines 26-40);

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(c) a first ground layer (3 in Fig. 1) formed on an upper surface of said internal layer, said first ground layer disallowing radiation to pass therethrough (col. 3, lines 26-40); and

(d) a second ground layer (4 in Fig. 1) formed on a lower surface of said internal layer, said second ground layer disallowing radiation to pass therethrough (col. 3, lines 26-40).

Eda fails to explicitly disclose (e) a ground line formed in a second area except said first area in said internal layer.

In a similar field of endeavor, Suzuki provides evidence in an electric transmission line, multiple ground lines (1_{a3} , 1_{b3} ... 1_{g3} in Fig. 1) disposed across the dielectric opposite signal lines, each conductor spaced apart from an adjacent ground line (col. 4, lines 35-44).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Eda to include multiple (i.e., reads on a second ground line) ground lines in different areas (i.e., reads on second area except first area) within an internal layer (e.g., between layer 3 insulators) for the purpose of reducing the signal transmission loss.

Regarding claims 2,8 and 14 Eda as modified by Suzuki, further discloses the flexible board (and fabrication of) as set forth in claims 4,10 and 16, respectively, further comprising:

(f) inherently, a first cover layer (3 in Fig. 1) formed over a surface (i.e., reads on top surface) of said first ground layer (col. lines 33-40); and

(g) inherently, a second cover layer (4 in Fig. 1) formed over a surface (i.e., reads on bottom surface) of said second ground layer (col. 3, lines 33-40)

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Regarding claims 3,9 and 15, Eda as modified by Suzuki further discloses the flexible board (and fabrication of) as set forth in claims 2, 8 and 14, respectively, further comprising electrically insulating adhesive layers (i.e., it is inherent in a multi-layer substrate to use adhesive layers in order for the stripline and dielectric layers can be held together) sandwiched among said internal layer, said first and second ground layers, and said first and second cover layers (see Fig. 1) .

Regarding claims 5,6, 11,12, 17 and 18 Eda as modified by Suzuki further discloses the flexible board (and fabrication of) as set forth in claims 4,10 and 16, respectively, wherein a plurality of through-holes (i.e., reads on via holes) is formed throughout (i.e., electrically connecting) said first ground layer, said internal layer (i.e., includes said ground line), and said second ground layer (col. 2, lines 33-35).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Quan, U.S. Patent No. 5,631,446, discloses a microstrip flexible printed wiring board interconnect line.

Compton, U.S. Patent No. 4,680,557, discloses a staggered ground-plane microstrip transmission line.

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Moye et al., U.S. Patent No. 5,057,798, discloses a space-saving two sided microwave circuitry.

Jain et al., U.S. Patent No. 6,133,805, discloses an isolation in multi-layer structures.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy K. Contee whose telephone number is (703) 308-0149.

The examiner's normal working hours are between 5:30 a.m. and 2:00 p.m., Monday through Friday.

If the examiner can not be reached, the examiner's supervisor, Marsha Banks-Harold can be reached on (703)305-4379.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Customer Service Office whose telephone number is (703)306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

((703) 872-9306, (for informal or draft communications, please label "PROPOSED" or "DRAFT"))

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*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington.
VA., Sixth Floor (Receptionist).*


Joy K. Contee

November 26, 2003

 11/30/03
CHARLES APPIAH
PRIMARY EXAMINER